

FIVE NEW SPECIES OF THE GENUS *PARAFONTARIA* (DIPLOPODA: XYSTODESMIDAE) FROM JAPAN

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Synopsis

SHINOHARA, Keizaburo (Koiwa Kōtō-Gakko, 10-1, Hon-issiki 3 chome, Edogawa-ku, Tokyo, 133 Japan): Five new species of the genus *Parafontaria* (Diplopoda: Xystodesmidae) from Japan. *Acta arachnol.*, **35**: 1-9 (1986).

The diplopods of the genus *Parafontaria* (VERHOEFF 1936, 1941; HOFFMAN 1978) are endemic to Japan and distributed in montane areas. Until now, thirteen species have already been known in the genus. Five new species of the genus were obtained from various localities of central area of Honsyu, the mainland of Japan. They are *P. echizenensis* sp. nov., *P. crenata* sp. nov., *P. longa* sp. nov., *P. ishiii* sp. nov. and *P. shiraiwaensis* sp. nov.

Parafontaria echizenensis sp. nov.

(Fig. 1)

Diagnosis: The new species resembles in general form *P. laminata* ATTEMS, 1909, and *P. kuhlkatzi* VERHOEFF, 1937, but it differs from the latter in the structure of male gonopod; the new species solenomerit of the acropodite is approximately equal in length to the flat branch.

Description: Body length about 32 mm, width 6 mm. Generally, female slightly larger than male. Colour light pale brown, but the border of pretergite and metatergite with red spots, and metatergite with purplish brown crescent-shaped spots along the posterior margin, and with red spots on anterior half and lateral side of tergites. Projections of posterior corners of keels exist on the last several tergites. A longitudinal dark blue stripe found on the axis of body. Head with a pair of setae on vertex; the 2nd article of antenna longest, and 3rd > 4th > 5th \approx 6th > 1st > 7th in length. Coxal processes of legs exist approximately in the 19th legs and the succeeding ones; spinal processes of prefemur exist in about

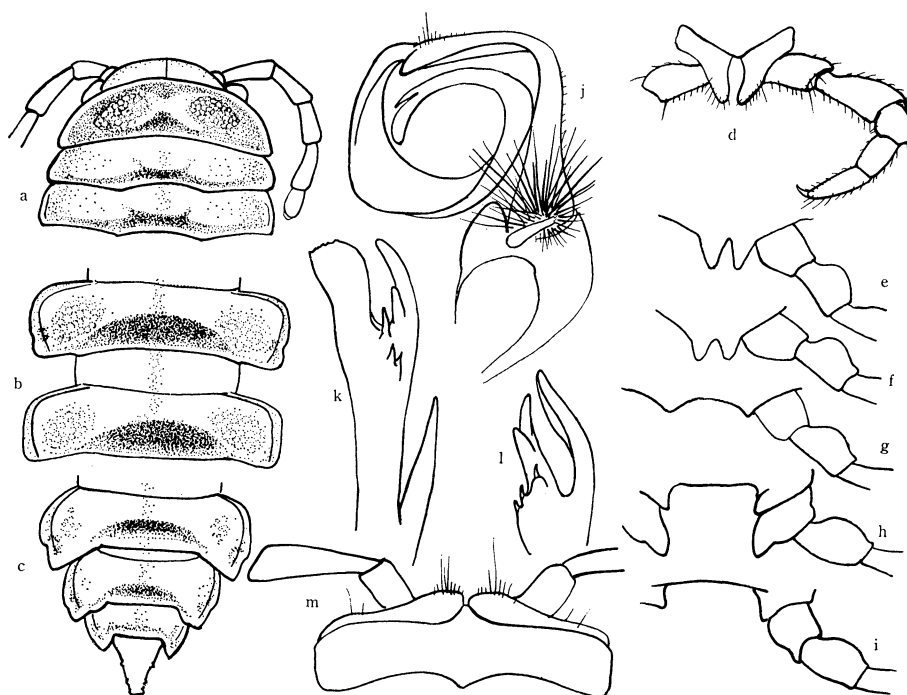


Fig. 1. *Parafontaria echizenensis* sp. nov. a. Head and three tergites. b. Tenth and eleventh tergites. c. Body end. d. Second leg. e-f. Sternal processes and basal parts of 3rd-7th legs. e. 3rd, f. 4th, g. 5th, h. 6th, i. 7th. j. Male gonopod. k-l. Distal end of gonopod. m. Sternite and basal part of 2nd leg in female.

the 13th legs and the succeeding ones. In male, coxa of the 2nd leg with a large process at interior side. Sternal processes of the 3rd leg distant from each other. Sternal processes of the 4th leg similar to the above. The 5th and the 7th legs without processes, but the 6th leg with an expanded node on median surface of coxa. In male gonopod, coxa stout and large; telopod large and circular; prefemur with a few hairs near the distal end; the tibiotarsus of telopod flattened, and expanded at inside; exterior branch located near the tip. The flattened tip faces to the slender solenomerit. The solenomerit approximately equal in length to the flat branch of acropodite; an obtuse process and several sawlike processes exist on the ventral surface of acropodite. In female, the 2nd sternite depressed slightly on lateral margin. Coxa of the 2nd leg slightly expanded on median part, alike to that of *P. laminata*.

Holotype (male) and paratype (female) were obtained at Shimouchinami,

Ohno-shi, Fukui Prefecture, on June 10, 1982, by Mr. Hideo KASAHARA, and preserved in the author's collection.

***Parafontaria crenata* sp. nov.**

(Fig. 2)

Diagnosis: This animal resembles in general form *P. laminata*, but the tip of male gonopod is different from that of *P. laminata*.

Description: Body length 50 mm or so, width of postcephalic somites approximately 7.5 mm. General colour of specimens pale brown, but unknown in alive. Column hemicircular, equal in width to that of the 2nd tergite. Lateral keels of tergites rounded in anterior corners, but the posterior corners angular; tergal processes projecting in the last several tergites only. Coxal processes and prefemoral processes of legs arising from about the 9th leg and the suc-

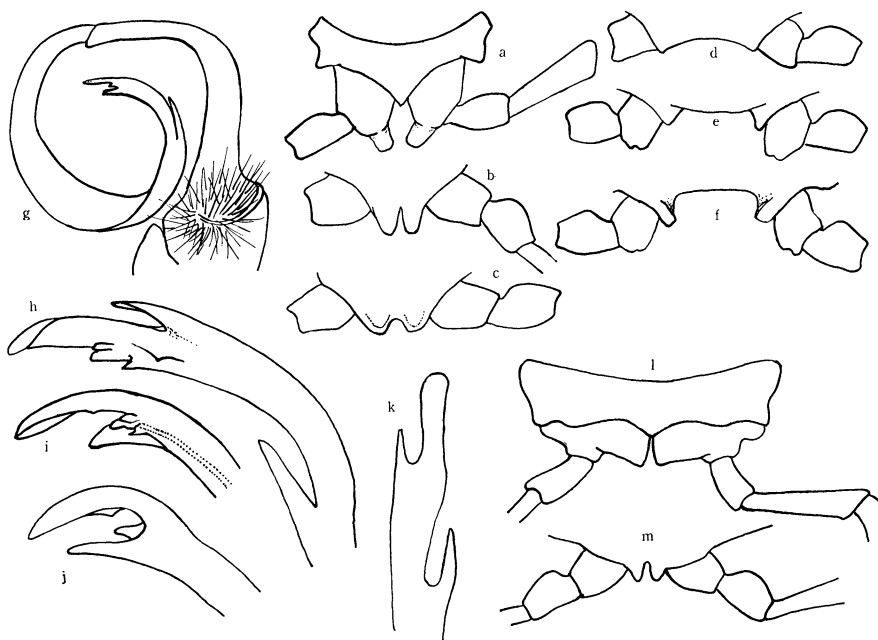


Fig. 2. *Parafontaria crenata* sp. nov. a. Sternite and basal part of 2nd leg. b-f. Sternal processes and basal parts of 3rd-7th legs. b. 3rd, c. 4th, d. 5th, e. 6th, f. 7th. g. Gonopod of male, femur and tibiotarsus. h-k. Distal end of gonopod. l. Sternite and basal part of 2nd leg in female. m. The same of 3rd leg in female.

ceeding ones; these processes becoming progressively stronger toward posterior direction. In male, coxa of the 2nd leg with a large process at intero-posterior side; sternal processes of the 3rd, 4th and 5th legs very similar to those of *P. laminata*; coxae of the 6th and the 7th legs without protuberance on inside. In general structure, male gonopod closely akin to that of *P. laminata*; the inner spinelike branch located at lateral part near the tip of telopod; acropodite not so extending in the median part; two protuberances (Verhoeff's "praestomatische Fortsätze") exist at inner surface near opening part of solenomerit; external branch situated at exterior side of the solenomerit; the tip (Verhoeff's "post-stomatische Fortsätze") stretches flatly. In female, the 2nd sternite projecting on median part of anterior margin, and lateral part expanded; the coxae of the 2nd legs unique in form, large, projecting widely, joined to prefemur in its median part; coxae of the 3rd legs unmodified; the 3rd sternite with two obtuse processes.

Holotype (male) and paratype (female) were collected at Horaiji, Aichi Pre-

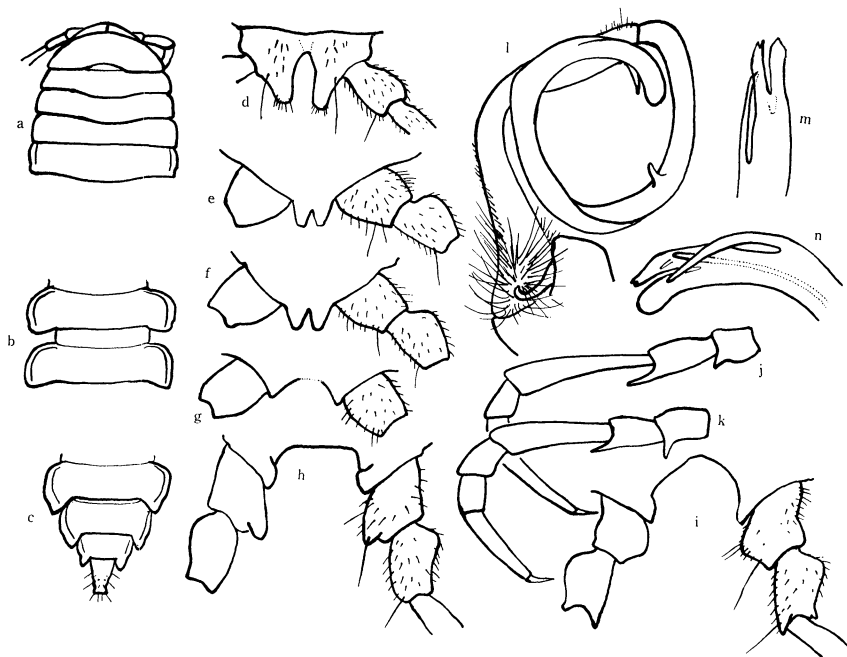


Fig. 3. *Parafontaria longa* sp. nov. a. Posterior part of body. b. Tenth and eleventh tergites. c. Body end. d. Coxal process of 2nd leg. e-i. Sternal processes and basal parts of 3rd-7th legs. e. 3rd, f. 4th, g. 5th, h. 6th, i. 7th. j. 12th leg. k. Last leg. l. Gonopod of male. m-n. Distal end of male gonopod.

fecture, on Aug. 8, 1962, by late Dr. Kazuo OGAWA, and preserved in the author's collection.

Parafontaria longa sp. nov.

(Fig. 3)

Diagnosis: A large-sized species in comparison with the other congeners. Male gonopod has a very short hooklike twig (inner branch) on median part of tibiotarsus (acropodite).

Description: Body length approximately 50 mm; width of postcephalic somites 8 mm and somites 5 mm. General colour in spirit brown with gray tinge, ventral surface and legs yellow. Tergites smooth in rearer segments posterior to about the 14th tergite; posterior corners of keels well produced caudally beyond posterior edge of tergites. Repugnatorial pores of the 15th and 16th somites found on the extension line of posterior margin of the tergites. In male, large coxal processes of the 2nd leg projecting backward; the sternite between coxae of right and left of the 3rd and the 4th legs with two rounded processes directed downward. The sternite of the 5th leg without process. In the 6th and 7th legs, each coxa with an obtuse process on inside. Spiral process of prefemur hinder about the 11th leg, long and stout, approximately half as long as prefemur. Conical processes of coxae of legs exist behind the 8th legs generally. In male gonopod, prefemuro-femural region with an obtuse distal projection; acropodite with a small hooklike process (=interior branch) in its median part; distal end of the telopod divided into three branches, one of them, a flat lamina, with rounded simple edge, while the soleno-

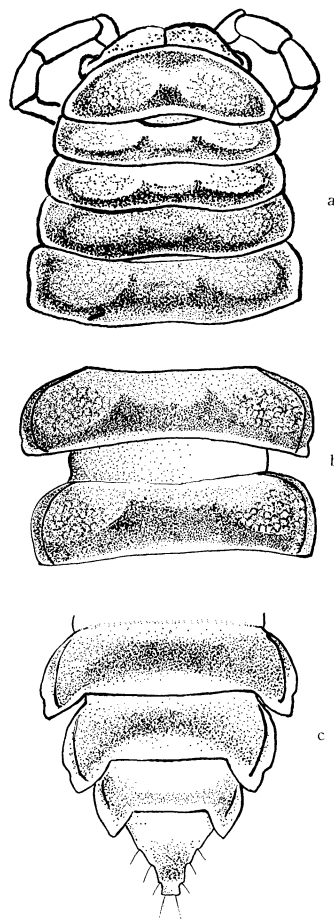


Fig. 4. *Parafontaria ishiii* sp. nov. a. Head and anterior five tergites. b. Tenth and eleventh tergites. c. Body end.

merit with two teeth at its under surface, and the last one forming a slender exterior branch. Female still unknown.

Holotype (male) was obtained at Takayama, Gifu Prefecture, on Aug. 27, 1962, by the author and preserved in the author's collection.

***Parafontaria ishiii* sp. nov.**

(Figs. 4-5)

Diagnosis: This species can be readily distinguished at sight from the other species of *Parafontaria* by having a broad transverse darkish band on each tergite. Gonopod of male has a striking resemblance to that of *P. erythrosoma* TAKAKUWA, 1942, but in the new form, two small projections exist on the distal part of prefemurofemur of telopod. Sternite of the second leg of female is much different from that of the other relative species.

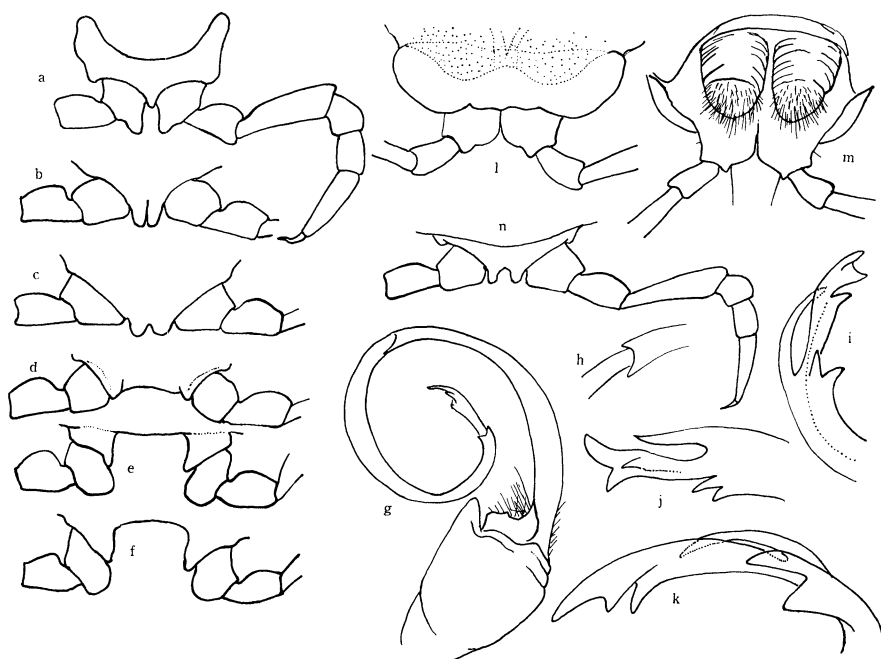


Fig. 5. *Parafontaria ishiii* sp. nov. a. Sternite and 2nd leg. b-f. Sternal processes and basal parts of 3rd-7th legs. b. 3rd, c. 4th, d. 5th, e. 6th, f. 7th. g. Gonopod of male. h-k. Distal end of male gonopod. l. Sternite and coxa of 2nd leg in female. m. The same, posterior view. n. Sternal process and 3rd leg in female.

Description: Body length some 33 mm; greatest width 5 mm in postcephalic somites including keel, and 3.5 mm in somites. Ventral surface yellowish white, but dorsal surface dark-colored by deeply dark transverse zone of tergites with irregularly dotted elliptical crest on each side. Repugnatorial pores found on the near part of the distal end of keels. Column wholly darkish violacent brown. Posterior projections of lateral keels exist only on the last 3 or 4 tergites. Spinelike prefemoral process of legs exist roughly at the rear of the 12th legs; it is smaller than that of the other species of *Parafontaria*, and slightly smaller than own coxal process. Coxal process of the 2nd leg in male not evident. Sternal processes of the 3rd leg nestle closely to each other and those of the 4th leg small. Coxae of the 6th and 7th legs much modified, each with a swelling processes in median corner. In male gonopod, acropodite is divided in the distal end which has a small process on the under surface, and two parallel actute branches and one lobelike process exist in front of the above mentioned small process; prefemurofemur of telopod with two distal projections on borders of tibiotarsus, the outside projection being somewhat longer than the inside one. In female, coxa of the 2nd leg nearly pentagonal, much narrower than the sternite. The sternite of the 2nd leg much modified as shown in Fig. 5 (l and m).

Holotype (male) and paratype (female) were collected by Mr. Kiyoshi ISHII at Gongenmori, Chiba Prefecture, on May 5, 1969, and preserved in the author's collection.

***Parafontaria shiraiwaensis* sp. nov.**

(Fig. 6)

Diagnosis: This new species closely akin to *P. circula* ATTEMS, 1901, but differs from the latter in male gonopod which has a broad inner branch near the tip of acropodite.

Description: Body length nearly 32 mm, width 5 mm or so. General colour yellowish brown. Tergites smooth, not rugged, the posterior corners of keels projecting on the posterior half of body. The second leg with a coxal process. The third sternite with two knobs which are contact together, and those of the 4th sternite similar to the above, and the 5th sternite with two detouched knobs between left and right legs. Conical processes of coxae appear behind about 15th pair of legs; prefemoral spines of legs appear on the 4th legs and the

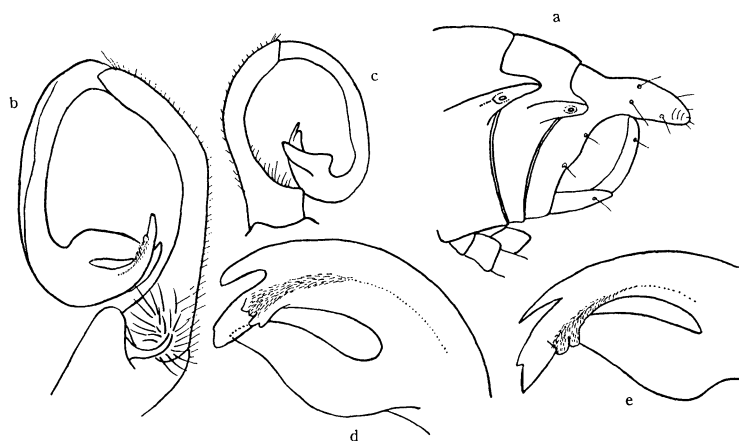


Fig. 6. *Parafontaria shiraiwaensis* sp. nov. a. Body end (lateral view).
b-c. Gonopod of male. d-e. Distal end of male gonopod.

succeeding ones. In male gonopod, general form of telopod looplike; thick coxae with a rounded process; slender prefemurofemur bent down; tibiotarsus (acropodite) with a broad inner branch near the tip. Exterior branch of the tip shorter than posterior branch ("poststomatistische Fortsätze"); the opening part of seminal groove covered by minute hairs.

Holotype (male) was collected by the author, at Mt. Shiraiwa-yama, Chichibu, Saitama Prefecture, on Aug. 2, 1960 and preserved in the author's collection.

Acknowledgement

The author wishes to express his hearty thanks to Mr. Hideo KASAHARA (Fukui Sōgō Green Center), Mr. Kiyoshi ISHII (Dokkyo University, School of Medicin), Dr. Keiko NIJIMA (Forestry and Forest Products Research Institute) and late Dr. Kazuo OGAWA for their kindness in supplying him with the specimens used in this paper.

摘 要

篠原圭三郎（東京都立小岩高等学校，〒133 東京都江戸川区本一色 3-10-1）：日本産ババヤスデ属の5新種。

Parafontaria（ババヤスデ属）は日本特産で現在まで13種が既知である。本報では本州中部で得られた5新種を記載した。

P. echizenensis sp. nov. エチゼンキシャヤスデ（新称），模式産地：福井県大野市下打波。（*Iaminata* 群に入る新種である）。

- P. crenata* sp. nov. ミカワババヤスデ (新称)。模式産地：愛知県鳳来寺町，
P. longa sp. nov. ヒダババヤスデ (新称)。模式産地：岐阜県高山市城趾公園。
P. ishiii sp. nov. トラフババヤスデ (新称)。模式産地：千葉県千葉市権現森。
P. shiraiwaensis sp. nov. シライワババヤスデ (新称)。模式産地：埼玉県秩父郡人滝村白岩山。

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